Introduction

This distribution contains Statistical Analysis of Global Growth (SAGG) Project Version 1.8. This version of the software can be installed over any previous versions of SAGG without any adverse problems. The current version of the package is compatible with all current operating system platforms at the medical centers and has minimal impact on the IRM support staff. This package operates on DSM, MSM, and OpenM-NT system platforms.

The Veterans Health Administration (VHA) developed the Statistical Analysis of Global Growth (SAGG) Project in order to obtain more accurate information regarding the current and future Veterans Health Information Systems and Technology Architecture (**V**IST**A**) database growth rates at the VA Medical Centers (VAMCs).

SAGG is a fully automated support tool developed by the Capacity Management (CM) team, which entails the monthly capture of global database, package and file size information from participating sites.

Installing the SAGG Project software creates the collection process mechanism and other necessary components of the package. The fully automated data collection cycle entails capturing all production global, package, and file specifics at the site into a temporary ^XTMP("KMPS") collection global. Once collected, the information is converted into an electronic mail message that is automatically transferred via network mail and merged into a CM National Database. The temporary collection global is then deleted from the site's system. The site also receives a summary of the global statistical data in the form of an electronic turn-around message.

Implementation and Maintenance

After the initial setup procedures are performed as detailed in the *Statistical Analysis of Global Growth (SAGG) Project V. 1.8 Installation Guide*, the collection process basically operates transparent to IRM with minimal impact on system resources. The package uses the Kernel supplied TaskMan utility to schedule the initial global collection cycle, and it is then rescheduled to capture on a regular monthly basis. The monthly time frame for data accumulation was chosen in order to enhance global, package, and file trend analysis.

Implementation

This distribution of the SAGG Project is dependent on the previous installation of Kernel Patch XU*8*90. Therefore, sites should ensure that Kernel Patch XU*8*90 has been successfully installed prior to installing this package. Kernel Patch XU*8*90 introduced the Kernel %ZOSVK-namespaced routines. The %ZOSVK* routines contain code that enables use of the VIEW command and $VIEW function to get information from the operating system.

Capacity Management (CM) has been given the KMP* namespace for both routines and global(s). The SAGG Project package utilizes the KMPS namespace for its routines and global. The SAGG Project Version 1.8 creates a new ^KMPS global to store SAGG PROJECT file (#8970.1) information. This global will be minimal in size and will not experience any growth. Therefore, you should review your translation table setting(s) to determine the proper placement for the KMP* global namespace.

Informational Messages

The following are examples of informational messages that the IRM staff may receive while the post-installation routine is running:

1. ```
   ERROR – Missing new file #8970.1 ...
   Please correct the ERROR condition.
   Then re-run routine MOV^KMPSPST.
   ```

   This error indicates that the Kernel Installation and Distribution System (KIDS) distribution did not install the new SAGG PROJECT file (#8970.1). Review the installation process to determine the cause and correct the

problem. The installation should then be restarted by re-running routine MOV^KMPSPST.

2. `INFO – No data found in old file #11120.`
   `Enter data manually with 'Edit SAGG Project File'`
   `[KMPS SAGG FILE] option.`

   This informational message indicates that the old SAGG PROJECT file (#11120) did not exist on the system. Therefore, after the installation completes, the IRM staff should manually input the volume set information by using the Edit SAGG Project File [KMPS SAGG FILE] option.

3. `INFO – No VOLUME SET data found in old file #11120.`
   `Enter data manually with 'Edit SAGG Project File'`
   `[KMPS SAGG FILE] option.`

   This informational message indicates that the old SAGG PROJECT file (#11120) did not contain any volume set information. Therefore, after the installation completes, the IRM staff should manually input the volume set information by using the Edit SAGG Project File [KMPS SAGG FILE] option.

4. `ERROR – Unsuccessful in adding VOLUME SET  xxx`
   `Enter data manually with 'Edit SAGG Project File'`
   `[KMPS SAGG FILE] option.`

   This error message indicates that post-installation routine was not successful in adding the volume set information into the new SAGG PROJECT file (#8970.1). Therefore, after the installation completes, the IRM staff should manually input the volume set information by using the Edit SAGG Project File [KMPS SAGG FILE] option.

Maintenance

Information throughout this manual is meant to help IRM in the maintenance of the package. The discussion that follows covers the options available to assist IRM in that maintenance.

IRM staff should be aware that the SAGG PROJECT file (#8970.1) must be updated any time a volume set is added to or deleted from their system configuration. IRM should utilize the Edit SAGG Project File [KMPS SAGG FILE] option in order to accomplish this task. Additionally, IRM should use this option whenever the location of the ^XTMP global has been changed.

The SAGG Project package uses the KMPS-SAGG mail group for distribution of reports and error messages. IRM should maintain the members of the mail group through the Edit KMPS-SAGG Mail Group [KMPS SAGG MAIL] option.

The accuracy of the global information from the site is dependent on the SAGG Master Background Task [KMPS SAGG REPORT] running every 28 days. IRM staff should ensure that the background task is scheduled to run by reviewing the Status of SAGG Collection Routines [KMPS SAGG STATUS] option. If necessary, the background task can be rescheduled with the Schedule/Unschedule Options [XUTM SCHEDULE] option located under the Taskman Management menu.

Globals

This version of the SAGG Project package deletes the old namespaced globals ^A1B5 and ^A1B5GE after moving the data to the new KMPS namespace.

KMPS **Description:** This global contains data for the SAGG PROJECT file. This global only contains the SAGG PROJECT file (#8970.1) and is minimal in size. Therefore, this global will not grow large.

The global should be journalled and translated, if the operating system supports these functions.

Journalling: Mandatory

XTMP("KMPS") **Description:** The ^XTMP global is the storage location for inter-process temporary data. The SAGG Project package uses the ^XTMP("KMPS") sub-node to temporarily store global, package, and file data during the collection cycle. The contents of this sub-node are deleted after completion of the collection cycle.

Per *Kernel V. 8.0 Technical Manual*: The ^XTMP global should not be journalled. However, the ^XTMP global should be translated, if the operating system supports this function.

Journalling: Not recommended

File List

This version of the SAGG Project package moves the data within the old SAGG PROJECT file (#11120) to the new SAGG PROJECT file (#8970.1). The old SAGG PROJECT file (#11120) will then be deleted.

Files

File Number	File Name	Global	File Description
8970.1	SAGG Project	^KMPS(8970.1	This file contains the location information for the temporary ^XTMP global and the names of all production volume sets on the system. No data comes with the file.

Templates

The SAGG Project package does not contain any templates within this version.

File List

Routine List

This version of the SAGG Project package deletes the old routines in the A1B5* and %A1B5* namespaces.

Name	**Description**
KMPSENV	An environment check routine that determines which system specific collection routines should be installed. The system variable ^%ZOSF("OS") is used to determine the type of system on which the KIDS distribution is running.
KMPSGE	Master collection routine which is invoked through the TaskMan scheduling options. This routine coordinates the collection of global, package, and file data; then, it will network the collected data to the Capacity Management (CM) National Database.
KMPSLK	Routine that permits the capture of specific **V**IST**A** package and file data including system configuration information.
KMPSLOAD	Routine that renames the system specific collection routines of ZOSVKSxE and ZOSVKSxS to the %ZOSVKS-namespace. This routine was previously installed by Kernel Patch XU*8*90. This routine is also used to clean up the old A1B5- and %A1B5-namespaced routines.
KMPSPRE	A pre-installation routine that changes the PREFIX of the SAGG PROJECT package to KMPS. Additionally, it changes the mail group A1B5-SAGG to KMPS-SAGG and the background option A1B5 SAGG REPORT to KMPS SAGG REPORT.
KMPSPST	A post-install routine that updates the SAGG PROJECT data in the PACKAGE file (#9.4), moves data from the old SAGG PROJECT file (#11120) to the new SAGG PROJECT file (#8970.1). Additionally, this routine deletes the old SAGG PROJECT file (#11120), reschedules (if possible) the new KMPS SAGG REPORT background task, and deletes any data remaining in the old A1B5GE temporary collection global.
KMPSUTL	A utility routine that provides several management functions.

ZOSVKSME *MSM-DOS* specific collection routine which gathers and stores data in the temporary ^XTMP("KMPS") global. The KIDS environment check routine determines the system platform and installs the appropriate collection routine. This routine will be installed and renamed as %ZOSVKSE by Kernel Patch XU*8*90.

ZOSVKSMS *MSM-DOS* specific routine that pre-selects all data globals to be analyzed. The KIDS environment check routine determines the system platform and installs the appropriate collection routine. This routine will be installed and renamed by Kernel Patch XU*8*90 as %ZOSVKSS.

ZOSVKSOE *OpenM-NT* specific collection routine that gathers and stores data in the temporary ^XTMP("KMPS") global. The KIDS environment check routine determines the system platform and installs the appropriate collection routine. This routine will be installed and renamed by Kernel Patch XU*8*90 as %ZOSVKSE.

ZOSVKSOS *OpenM-NT* specific routine that pre-selects all data globals to be analyzed. The KIDS environment check routine determines the system platform and installs the appropriate collection routine. This routine will be installed and renamed by Kernel Patch XU*8*90 as %ZOSVKSS.

ZOSVKSVE *DSM for OpenVMS* specific collection routine that gathers and stores data in the temporary ^XTMP("KMPS") global. The KIDS installation determines the system platform and installs the appropriate collection routine. This routine will be installed and renamed by Kernel Patch XU*8*90 as %ZOSVKSE.

ZOSVKSVS *DSM for OpenVMS* specific routine that pre-selects all data globals to be analyzed. The KIDS environment check routine determines the system platform and installs the appropriate collection routine. This routine will be installed and renamed by Kernel Patch XU*8*90 as %ZOSVKSS.

Key Variables

Name	Description
KMPSMGR	The name of the MGR UCI as determined by the ^%ZOSF("MGR") variable
KMPSPROD	The name of the Production UCI as determined by the ^%ZOSF("PROD") variable
KMPSSITE	The station number of the site as determined by the ^DD("SITE",1) variable
KMPSX1	The type of M platform as determined by the ^%ZOSF("OS") variable
NUM	The current date in M internal format as given by the +$H system variable

Exported Options

SAGG Project Manager Menu
[KMPS SAGG MANAGER]

The KMPS SAGG MANAGER menu is located under the Capacity Management [XTCM MAIN] menu. The XTCM MAIN menu may be assigned to the IRM staff member(s) who support(s) this package and other capacity management tasks. The SAGG Project Manager Menu contains the following options:

```
EF        Edit SAGG Project File [KMPS SAGG FILE]
EM        Edit KMPS-SAGG Mail Group [KMPS SAGG MAIL]
SP        Stop SAGG Collection [KMPS SAGG STOP]
SS        Status of SAGG Collection Routines [KMPS SAGG STATUS]
```

Edit SAGG Project File
[KMPS SAGG FILE]

This option allows you to edit the information contained in the SAGG PROJECT file (#8970.1). Use this option to input the location information for the temporary ^XTMP global and the names and location of all production volume sets on the system.

Edit KMPS-SAGG Mail Group
[KMPS SAGG MAIL]

This option allows you to edit the KMPS-SAGG mail group. Use this option to input the names of the IRM staff that will receive messages alerting them of the completion of or problems with the data collection phase. Also, this mail group receives all SAGG turn-around messages.

Stop SAGG Collection
[KMPS SAGG STOP]

This option informs the SAGG Project collection routines to begin an orderly shutdown process. Each collection routine stops after reaching an appropriate break point.

**Status of SAGG Collection Routines
[KMPS SAGG STATUS]**

This option displays the current status of the SAGG Project collection routines. This option identifies the volume sets that will be monitored for global growth analysis. Additionally, this option shows the reschedule frequency of the SAGG Master Background Task [KMPS SAGG REPORT] and whether the SAGG Project collection routines are currently running.

Single Options

The following option does not appear on any menu:

**SAGG Master Background Task
[KMPS SAGG REPORT]**

This option is not assigned to any menu. This option is scheduled through TaskMan to start the SAGG Project's master collection routine in the background. This option should be rescheduled with the Schedule/Unschedule Options [XUTM SCHEDULE] under the Taskman Management menu for every 28 days to ensure same day-of-week collection cycles. If this option does not execute properly, a warning message will be sent to the KMPS-SAGG mail group.

Menu/Option Assignment

The KMPS SAGG MANAGER menu is located under the Capacity Management [XTCM MAIN] menu. The XTCM MAIN menu may be assigned to the IRM staff member(s) who support(s) this package and other capacity management tasks.

Protocols

The SAGG Project does not export any protocols with this version.

Archiving and Purging

Archiving

The SAGG Project package V. 1.8 contains one file called SAGG PROJECT. This file will be minimal in size and will not experience any growth. Since the SAGG Project package maintains minimal data at the site, archiving functions are not necessary and are not provided.

Purging

The SAGG Project package V. 1.8 contains one file called SAGG PROJECT. This file will be minimal in size and will not experience any growth. Global data information is accumulated into the ^XTMP("KMPS") global and is killed after uploading to a mail message which is forwarded to the Capacity Management (CM) National Database. Since the SAGG Project package maintains minimal data at the site, purging functions are not necessary and are not provided.

Callable Routines

This version of the SAGG Project package does not provide any entry points that are available for general use.

External Relations

The SAGG Project package V. 1.8 relies on the following external packages to run effectively:

Package	Minimum Version Needed	Patch Information
Kernel	8.0	Patch XU*8*90
VA FileMan	21.0	
MailMan	7.1	

This version of SAGG utilizes Kernel %ZOSVK-namespaced routines that utilize system specific calls. The Kernel %ZOSVK-namespaced routines were introduced with the issuance of Kernel Patch XU*8*90.

All operating system interfaces on which the SAGG Project is dependent have been encapsulated into the Kernel %ZOSVK-namespaced routines. The %ZOSVK* routines contain code that enables use of the VIEW command and $VIEW function to get information from the operating system.

DBA Approvals and Database Integration Agreements

The Database Administrator (DBA) maintains a list of Database Integration Agreements (DBIAs) or mutual agreements between package developers allowing the use of internal entry points or other package-specific features that are not available to the general programming public.

This version of SAGG Project is not dependent on any agreements.

Internal Relations

All options in the SAGG Project V. 1.8 package under the SAGG Project Manager Menu [KMPS SAGG MANAGER] can function independently. Only the Schedule/Unschedule Options [XUTM SCHEDULE] under the Taskman Management menu can invoke the SAGG Master Background Task [KMPS SAGG REPORT].

Relationship of SAGG Project with Kernel

This version of SAGG utilizes Kernel %ZOSVK-namespaced routines that utilize system specific calls. The Kernel %ZOSVK-namespaced routines were introduced with the issuance of Kernel Patch XU*8*90.

Namespace

The SAGG Project package V. 1.8 has been assigned to the new KMPS namespace. All references to the old A1B5 namespace have been removed from this distribution.

Additionally, this version of SAGG utilizes Kernel %ZOSVK-namespaced routines that utilize system-specific calls. The Kernel %ZOSVK-namespaced routines were introduced with the issuance of Kernel Patch XU*8*90.

Package-wide Variables

The SAGG Project package V. 1.8 does not employ the use of package-wide variables. Please refer to the "Key Variables" topic in this manual for the key variables that are employed within this package.

SAC Exemptions

This version of the SAGG Project package does not employ any exemptions from the Programming Standards and Conventions (SAC). Also, this version of the SAGG Project package utilizes Kernel %ZOSVK-namespaced routines that utilize system-specific calls. The Kernel %ZOSVK-namespaced routines were introduced with the issuance of Kernel Patch XU*8*90.

Security

Keys

This version of the SAGG Project package does not contain any security keys.

VA FileMan File Protection

#	Name	DD	RD	WR	DEL	LAYGO
8970.1	SAGG Project	@				

Y2K Compliance

This version of the SAGG Project package is fully compliant with all existing Year 2000 (Y2K) requirements as established by VHA for its **V**_IST_**A** products.

Glossary

Block
A unit of measure of the size of the disk used by both the operating system and M platforms. *DSM for OpenVMS* and *MSM-DOS* both have designated 1024 bytes per block, while *OpenM-NT* has 2048 bytes per block.

Capacity management
The process of assessing a system's capacity and evaluating its efficiency relative to workload in an attempt to optimize system performance.

Collection cycle
Occurs when the SAGG background task begins obtaining data regarding the size and efficiency of the globals on the monitored volume sets. Additionally, package and file information is collected. Normally, a site should schedule the collection cycle for every 28 days.

Data block
A component of the global tree-structure that is used by the M platform to contain the actual information.

Database
A set of information, consisting of at least one file, which is specific for a given purpose. The **V**IST**A** database is composed of a number of VA FileMan files.

Global
Tree-structured system of nodes containing common data. M platforms store data on the disk in the form of global arrays. A global is composed of both pointer and data blocks.

Global efficiency
Determines the amount of space utilized within the entire block structure of a particular global. A higher efficiency indicates that the global is compacted and, therefore, using less disk space.

Global size
Determines the amount of pointer and data blocks used by a particular global.

Map   Composed of subunits called blocks. A map consists of 400 blocks.

Pointer block   A component of the global tree-structure that is used by the M platform to find the location of data blocks.

SAGG   Statistical Analysis of Global Growth. A fully automated support tool developed by the Capacity Management (CM) team, which entails the monthly capture of global, database, package, and file size information from participating sites.

Session number   Timestamp of when the collection cycle was run. The session number is defined from the +$H system variable.

Turn-around message The mail message that is returned to the KMPS-SAGG mail group detailing the database and global growth over the previous reported session.

STATISTICAL ANALYSIS OF GLOBAL GROWTH
SAGG PROJECT

TECHNICAL MANUAL

Version 1.8

July 1998

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